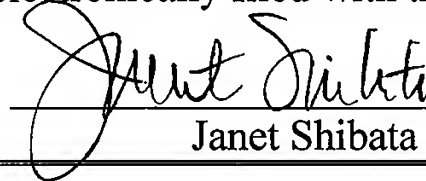


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Janet Shibata

**PATENT
PD-970227B**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Jamal Sarraf

Serial No. 10/695,723

Group Art Unit: 2618

Filed: October 28, 2003

Examiner: Tuan Hoang Nguyen

For: MULTI-SPOT-BEAM SATELLITE SYSTEM WITH BROADCAST AND
SURGE CAPACITY CAPABILITY

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BRIEF ON APPEAL

Sir:

The following Appeal Brief is submitted in response to the Notice of Appeal filed April 29, 2008.

I. Real Party in Interest

The real party in interest in this matter is The DIRECTV Group, Inc. of El Segundo, California which is majority owned by Liberty Media.

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-5 stand rejected in the Final Office Action and are appealed herein.

IV. Status of Amendments

There have been no amendments filed subsequent to the Final Office Action mailed January 29, 2008.

V. Summary of Claimed Subject Matter

Claim 1 is directed to a method for improving utilization of satellite capacity of a satellite system that uses multiple uplink and downlink spot beams. The spot beams are illustrated as reference numeral 14 in Fig. 1 and are described on page 5, ll. 18-27. The method includes the step of integrating an area-wide broadcast downlink beam (reference number 22 in Fig. 1; page 6, ll. 1-4) to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. This is generally illustrated in Fig. 1 and is described on page 10, ll. 13-28.

Claim 2 depends from claim 1 and recites the further step of allocating a primary spectrum of one polarization to uplink and downlink spot beams for point-to-point transmissions, and allocating a full primary spectrum of a polarization opposite to the one polarization to the area-wide broadcast downlink beam for broadcast transmission. This is described on page 8, ll. 11-21.

Claim 3 depends from claim 2 and recites the further step of assigning the full primary spectrum for broadcast transmissions in minimum-resolution broadcast bands. This is described on page 8, ll. 17-21.

Claim 4 depends from claim 3 and recites that the minimum-resolution broadcast bands are assigned to any and all uplink spot beams in any combination as configured by a

network control center 20. This is described on page 9, ll. 2-8 and page 9, ll. 27-31. The network control center is illustrated in Fig. 1.

Claim 5 depends from claim 4 and recites that each one of the multiple uplink and downlink spot beams can access the full primary spectrum for broadcast transmissions in increments of one minimum-resolution broadcast band and can transmit on at least a portion of at least one minimum-resolution broadcast band. This is described on page 7, ll. 23-35.

VI. Grounds of Rejection to be Reviewed on Appeal

The following issues are presented in this appeal:

Whether Claims 1-5 are unpatentable under 35 U.S.C. §103(a) over *Rosen* (4,831,619) in view of *Acampora* (4,425,639).

VII. Argument

The Rejection of Claims 1-5 over *Rosen* in view of *Acampora*

Claim 1

Claim 1 recites integrating an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. The Examiner points to *Rosen*, col. 4, ll. 30-41, Fig. 9, zones 31, 33, 35 and 37 as well as col. 2, ll. 19-40. Appellants admit that point-to-point and broadcast service is provided in the *Rosen* reference as described in col. 4.

On page 4 of the Office Action, the Examiner states that *Rosen* does not explicitly show that the downlink beam is used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. The Examiner then points to col. 4, ll. 21-59 of the *Acampora* reference for his teaching. This portion merely describes multiple spot beams and describes call blockage may occur when either the traffic originating or destined to a given spot beam region exceeds the capacity. There is no teaching or suggestion for area-wide beams or the use thereof. More specifically, there is no teaching or suggestion for what to do when transmissions from one or more multiple spot beams whose transmission capacity has been exhausted. Appellants admit that col. 4 ll. 45-50 describe call blockage in a spot beam region when the total capacity is exceeded. However, there is no suggestion for what to do after the blockage occurs. There is no

teaching or suggestion for using wide area beams when blockage occurs in multiple spot beams or point-to-point transmissions.

In response to the above, on page 2 of the Final Office Action, the Examiner cites col. 2, ll. 5-16 and col. 9, ll. 5-10. col. 2, ll. 5-16 describe a routing switch that can be configured on a dynamic basis to assign the traffic to appropriate time spots in channels in accordance with instantaneous traffic demand with the satellite without storage and in such a manner that none of the ground station needs to transmit simultaneously on two or more channels. The downlink beams have only a single-wide band channel and thus the appropriate spot beam must be chosen. Time slots within the channels for TDMA communication are chosen within the channels for communicating. Appellants still respectfully submit that no teaching or suggestion is provided for what to do when spot beams have been exhausted. col. 2, ll. 5-16 merely recite that the appropriate time slots and channels are configured. The col. 9, ll. 5-10 portion merely describes frequency-hopping in reassigning different channels. Frequency-hopping may be used to provide more secure communication but does not provide for adjusting communication based on exhausted spot beams. Clearly there is no teaching in either the col. 2 passage or the col. 9 passage for integrating an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted.

Further, Appellants respectfully submit that the combination of the Rosen and Acampora reference is improper. For example, the Examiner alleges that "It would have been obvious to one of ordinary skill in the art at the time the invention was made to use, downlink-beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted, as taught by Acampora, in order to provide the uplink spot beams are frequency-channelized into a plurality of equal capacity channels and the downlink spot beams each have their channels concentrated into a lesser number of higher bit-rate wider bandwidth transmission channel."

This brief explanation falls far short of the type of **explicit analysis** that is required by the Supreme Court in *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727 (2007). Absent such an express teaching or suggestion in the references, the explicit analysis and reasoning must be supplied by the Examiner. *Id.* In other words, the Examiner is required to provide explicit reasoning as to why one skilled in the art would be motivated to construct a system that uses

an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted. Neither reference teaches exhausting of a multiple spot beam and supplementing the spot-beam capacity with an area wide-broadcast downlink beam. The Examiner's reasoning is unclear as to the motivation. Here, the Examiner merely notes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide multiple spot beams whose transmission capacity has been exhausted and fails to provide explicit analysis and reasoning as required. The Examiner's reasoning merely addresses Acampora and not the combination of the two references. Further, the Examiner's reasoning fails to address the use of wide-area beams used when spot-beam capacity has been exhausted.

Therefore, the Acampora reference does not teach or suggest that an area-wide downlink beam is used to support the point-to-point transmissions of one or more multiple spot beams whose transmission capacity has been exhausted. The combination of the Rosen and Acampora references fails to teach or suggest the combination. Therefore, Appellants respectfully request the Examiner to reconsider the rejection of claim 1.

Claim 2

Claim 2 stands or falls together with claim 1.

Claim 3

Claim 3 depends from claim 2 and recites that the additional step of assigning the full primary spectrum for broadcast transmissions in minimum-resolution broadcast bands. The Examiner points to col. 6, l. 66 through col. 7, l. 2 for teaching minimum resolution broadcast bands. As stated on page 8 of the present application, the broadcast spectrum is assignable in minimum-resolution broadcast bands which are assignable to any and all uplink spot beams in any combination as configured by the network control center. It does not appear that the zone widths described in the Rosen reference teach minimum resolution broadcast bands. In the rejection of claim 3, the Examiner also fails to explicitly provide any reasoning as to why one skilled in the art would be motivated to form the combination. In the rejection of claim 3, only the Rosen reference is described and no reasoning for the combination with Acampora is provided. Therefore, the rejection of claim 3 also is not proper. Therefore,

Appellants respectfully request the Board to reverse the Examiner's position with respect to this rejection.

Claim 4

Claim 4 recites that the minimum resolution broadcast bands of claim 3 are assigned to any and all uplink spot beams in any combination as configured by a network control center. The Examiner points to col. 13, ll. 47-62 for this teaching. However, ll. 47-62 teach the details of the beam-forming network 98. The beam-forming network 98 is within a satellite as described in col. 13, l. 63 through col. 14, l. 3. Thus, the Rosen reference does not teach that the network control center assigns the minimum-resolution broadcast bands. In the rejection of claim 4, the Examiner also fails to explicitly provide any reasoning as to why one skilled in the art would be motivated to form the combination. In the rejection of claim 4, only the Rosen reference is described and no reasoning for the combination with Acampora is provided. Therefore, the rejection of claim 4 also is not proper. Appellants, therefore, respectfully request the Board to reverse the Examiner's position with respect to claim 4.

Claim 5

Claim 5 depends from claim 4 and recites that the uplink and downlink spot beams can access the full primary spectrum for broadcast transmission in increments of one minimum-resolution broadcast band and can transmit on at least a portion of at least one minimum-resolution broadcast band. The Examiner points to col. 15, ll. 33-58 for this teaching. This passage in col. 15 of the Rosen reference teaches the allocation of power. In the rejection of claim 5, the Examiner also fails to explicitly provide any reasoning as to why one skilled in the art would be motivated to form the combination. In the rejection of claim 5, only the Rosen reference is described and no reasoning for the combination with Acampora is provided. Therefore, the rejection of claim 5 also is not proper. Appellants, therefore, respectfully request the Board to reconsider the rejection of claim 5.

VIII. Claims Appendix

A copy of each of the claims involved in this appeal, namely Claims 1-5, is attached as a Claims Appendix.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.


XI. Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Please charge any fees required in the filing of this appeal to Deposit Account 50-0383.

Respectfully submitted,

Dated: June 23, 2008

By: 
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CLAIMS APPENDIX

1. A method for improving utilization of satellite capacity of a satellite system that uses multiple uplink and downlink spot beams, comprising: integrating an area-wide broadcast downlink beam to be used to support point-to-point transmissions of one or more of the multiple spot beams whose transmission capacity has been exhausted.
2. A method as recited in claim 1, further comprising: allocating a full primary spectrum of one polarization to uplink and downlink spot beams for point-to-point transmissions, and allocating a full primary spectrum of a polarization opposite to the one polarization to the area-wide broadcast downlink beam for broadcast transmissions.
3. A method as recited in claim 2, further comprising: assigning the full primary spectrum for broadcast transmissions in minimum-resolution broadcast bands.
4. A method as recited in claim 3, wherein the minimum-resolution broadcast bands are assigned to any and all uplink spot beams in any combination as configured by a network control center.
5. A method as recited in claim 4, wherein each one of the multiple uplink and downlink spot beams can access the full primary spectrum for broadcast transmissions in increments of one minimum-resolution broadcast band and can transmit on at least a portion of at least one minimum-resolution broadcast band.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.